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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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|-----------------|-------------|----------------------|---------------------|------------------|

10/634,130

08/04/2003

Brian G. Johnson

ITO.0045US (P16093)

5774

7590

12/29/2005

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EXAMINER

LE, THAO P

ART UNIT

PAPER NUMBER

2818

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/634,130 | Applicant(s) JOHNSON ET AL. | |
| | Examiner Thao P. Le | Art Unit 2818 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

Information Disclosure Statement (IDS) filed on **12/13/04, 12/19/04** and made of record. The references cited on the PTOL 1449 form have been considered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 10-30 are rejected under 35 USC 102 (b) as being anticipated by Reinberg, U.S. Patent No. 5,789,758.

Regarding claims 1, 14, 27, Reinberg discloses a device and the method of forming a memory device comprising a non-switching ovonic material 65 and a phase change material 75 (within the aperture 70) couple to the ovonic material.

Regarding claims 2-4, 16, Reinberg discloses forming non-switching ovonic material under the phase change material (65) and over the phase change material

(upper region of 75 provide an upper chalcogenide contact electrode, lines 34-37, Col. 4) and contacting with an electrode (Fig. 3).

Regarding claim 5, Reinberg discloses forming the phase change material and the non-switching ovonic material in a pore formed in an insulator (abstract).

Regarding claims 6-8, 15, 19-22, Reinberg discloses forming a second ovonic material in a cup-shape over the phase change material and filling the cup-shape ovonic material with an insulator or phase change material (the upper portion of layer 75) (Fig. 3).

Regarding claim 10, Reinberg discloses forming a cup-shaped first ovonic material and forming the phase change material within the cup-shaped first ovonic material (Fig. 3, 15-35, Col. 4).

Regarding claim 11, Reinberg discloses the second ovonic material that contacts the upper side of phase change material (one layer 75 acts as two layer, the portion of layer 75 within the cup 70 is active chalcogenide and the portion above the cup is electrode contact material; Col. 4).

Regarding claim 12, Reinberg discloses covering a portion of the phase change material with an insulator 35 (Figs. 2-3).

Regarding claim 23, Reinberg discloses the second ovonic material is in contact with phase change material along a portion of the phase change material and the remaining portion of the phase change material is covered by an insulator 35 (fig. 2).

Regarding claim 24, Reinberg discloses the non-switching ovonic material is a chalcogenide (5-8, Col. 4).

Regarding claim 25, Reinberg discloses the phase change material is a chalcogenide (18-33, Col. 4).

Regarding claim 26, Reinberg discloses the non-switching ovonic material and phase change material are chalcogenides.

Regarding claim 28, it is inherent that the system disclosed in claim 27 would have included a wireless interface which includes a dipole antenna.

Regarding claims 29-30, Reinberg discloses the non-switching ovonic material and phase change material are both formed of a chalcogenide and a second ovonic material is over the phase change material (Cols. 4-5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reinberg, U.S. Patent No. 5,789,758.

Regarding claim 9, discloses the non-switching ovonic material is a chalcogenide discloses the second ovonic material on a portion of the phase change material and covering the rest of the phase change material with oxide 35, 95 (Figs. 2-3) instead of nitride. However, it would have been well known in the art that oxide or nitride can be used as insulating material in the device of beuberg because they have similar characteristics and would yield similar results.

When responding to the office action, Applicants' are advice to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao P. Le whose telephone number is 571-272-1785. The examiner can normally be reached on M-T (7-6).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Thao P. Le', with a stylized, cursive script.

Thao P. Le

Art Unit 2818